Date:	Thursday, 5/31/2007 7:23:36 AM		
User:	Kim Johnston		

Process Sheet

POSITIVE RECALL

EFFECTIVE _____ AUTH _____
RELEASED _____ DATE _____

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: STEP WELDMENT
Job Number	: 32720 ~2		
Estimate Number	: 12577		
P.O. Number	: N/A	Part Number	: D3562042
This Issue	: 5/31/2007 S.O. No. : N/A	Drawing Number	: D3562 UNDER REVIEW
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: Type : LARGE FAB ASSY	Drawing Revision	: A
Previous Run	: 31445	Material	: N/A
Written By	:	Due Date	: 6/11/2007 Qty: 5 Um: Each
Checked & Approved By	: 07.05.31		
Comment	: Est Rev:A New Issue 06-11-09 JLM		

(circled handwritten note: Split 1)

Additional Product

Job Number:	||||| barcode |||||

Seq. #:	Machine Or Operation:	Description :
1.0	D2622120C	Extrusion

Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)

Qty	Part #	Description	Batch:
1	D2622-120C	Extrusion	B31984

Check Material for any Dents or Defects

LE 07.06.04 (S)

Seq. #:	Machine Or Operation:	Description :
2.0	D2734	206 Step Endplate

Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)
Pick:

Qty	Part Number	Description	Batch
2	D2734	End Cap	B30883

LE 07-06-04 (S)

Seq. #:	Machine Or Operation:	Description :
3.0	LARGE FAB 1	LARGE FABRICATION RESOURCE 1

Comment: LARGE FABRICATION RESOURCE 1

1-Cut D2622 extrusion as per Dwg D3562   a.m 07/06/04 LE (S)

2-Deburr and bevel ends for welding   LE 07.06.07

3-Weld (1)end cap as per Dwg D3562& QSI 004. Inspect for foreign objects as per QSI 024.
A/R Aluminum Rod M102756   LE 07-06-07 (S)

4-Grind end cap welds flush as per Dwg D3562   FF 07/06/07 (S)

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services   **Drawing Name:** STEP WELDMENT

Job Number: 32720   **Part Number:** D3562042

Job Number:

Seq. #:	Machine Or Operation:	Description :
4.0	QC5 *19*	INSPECT WORK TO CURRENT STEP

Comment: INSPECT WORK TO CURRENT STEP

QC5 07·06·07 ⑤   *Qc9 M07/06/07 ⑤ 1*

| 5.0 / 6.0 | SMALL FAB 1 | SMALL & MEDIUM FAB RESOURCE 1 |

Comment: SMALL & MEDIUM FAB RESOURCE 1

Drill Rivet holes as per dwg D3562. USING DT 8956

Debur & Touch-up holes with Alodine.   *FF 07-06-11*

| 6.0 / 7.0 | QC5 | INSPECT WORK TO CURRENT STEP |

Comment: INSPECT WORK TO CURRENT STEP

07.06.07 ①

| 7.0 / 5.0 | HAND FINISHING1 | HAND FINISHING RESOURCE #1 |

Comment: HAND FINISHING RESOURCE #1
Chemical Conversion Coat as per QSI 005 4.1

FF 07-06-07 ①

| 8.0 | QC3 | INSPECT POWDER COAT/CHEMICAL CONVERSION |

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

① *07·06·07*

| 9.0 | D35600*12* | ARM WELDMENT |

Comment: Qty.: 1.0000 Each(s)/Unit   Total : 5.0000 Each(s)
ARM WELDMENT   *B 32643*

07·06·08 1

| 10.0 | D35600*4/14* | ARM WELDMENT |

Comment: Qty.: 1.0000 Each(s)/Unit   Total : 5.0000 Each(s)
ARM WELDMENT
Batch: *B 326446*

07-06·08 1

| 11.0 | MS20600AD4W5 | Blind Rivet |

Comment: Qty.: 36.0000 Each(s)/Unit   Total : 180.0000 Each(s)   *SEE W/O CHANGE*
Blind Rivet *(x34)*
batch: *M8953 (x34) M7209 = (8)*

07·06·08 1

Qty (32)
U 07.06.11

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services	**Drawing Name:** STEP WELDMENT
Job Number: 32720	**Part Number:** D3562042

Job Number:

Seq. #:	Machine Or Operation:	Description :
12.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1

Comment: SMALL & MEDIUM FAB RESOURCE 1

Rivet legs using Magnabond as per dwg D3562.
Ensure to wipe off any exess magnobond of the step

A/R   Magnabond 6398   Batch: _B103628_   *ft. 01.06.08* ①

13.0	QC5	INSPECT WORK TO CURRENT STEP

Aug.08 ①

Comment: INSPECT WORK TO CURRENT STEP

14.0	LARGE FAB 1	LARGE FABRICATION RESOURCE 1

Comment: LARGE FABRICATION RESOURCE 1

1-Weld Remaining end cap as per Dwg D3562 & QSI 004. Inspect for foreign objects as per QSI 024.   *ft 01.06.08* ①
A/R   Aluminum Rod _M107756_

2-Grind end cap welds flush as per Dwg D3562   *ft 01.06.08* ①

15.0	QC9	VISUAL WELDING INSPECTION

Comment: VISUAL WELDING INSPECTION   M 07/06/11 ① (RH)

16.0	QC5	INSPECT WORK TO CURRENT STEP

07.06.11 (RH)

Comment: INSPECT WORK TO CURRENT STEP   Assembled on A/C

17.0	POWDER COATING *(Touch-up w/ active)*	POWDER COATING 07-06-11 ①

M104144

Comment: POWDER COATING
Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3   *BR/MR 07.06.11*

18.0	HAND FINISHING1	HAND FINISHING RESOURCE #1

Comment: HAND FINISHING RESOURCE #1
Wing Walk as per Dwg D3562 and QSI 005 4.4
Batch: _M104281_   H 04.06-11 ①

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services	Drawing Name: STEP WELDMENT
Job Number: 32720	Part Number: D3562042

Job Number:

|||| Barcode ||||

Seq. #:	Machine Or Operation:	Description :
19.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION

07·06·12

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

20.0	PACKAGING 1	PACKAGING RESOURCE #1

$ SEE W/O CHANGE FOR STEP #.5

POSITIVE RECALL

① E 07/06/12
U 07·06·12

Comment: PACKAGING RESOURCE #1
Pick Assembly Kit

Job Completion

POSITIVE RECALL

EFFECTIVE _____ AUTH _____

RELEASED ___U___ DATE 7/6/12

Dart Aerospace Ltd

WORK ORDER CHANGES

W/O:

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
07.06.11	12	MAGABOND STEP PRIOR TO POWDER COAT REF DS EMAIL.	*lE*	07.06-11		4P 07.06.11 per QS1042	0706.12
07.06.11	11	INSTALL Qty (32) MS20600AD4 RIVETS INSTEAD OF 36 REF DS EMAIL	*lE*	07.06.11		4P 07.06.11 per QS1042	0706.12

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes (No) DQA: 7 Date: 07/06/12

QA: N/C Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE (NCR)

NCR:

DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Dart Aerospace Ltd

WORK ORDER CHANGES

W/O:

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
07.06.11	19.5	PRESS FIT D2808 SPACER AFTER POWDER COAT, 2 PLACES B/N B2860D	FF	07.06.11	2	UP 07.06.11 PL 951042	07.06.12

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: ✓ Date: 07/06/12

QA: N/C Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE (NCR)

NCR:

DATE	STEP	Description of NC Section A	Corrective Action Section B — Initial Chief Eng	Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector

NOTE: Date & initial all entries

WORK ORDER NO. 32720

SHOP COPY
RETURN TO ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

DART

07.01.20

RELEASED

ROUND CORNER OF EXTRUSION TO MATCH BEND RADIUS OF END PLATE

1.00

45.0°

D2734 END PLATE
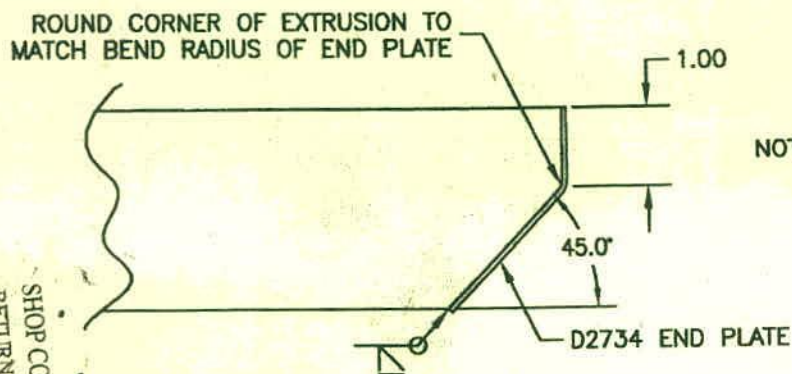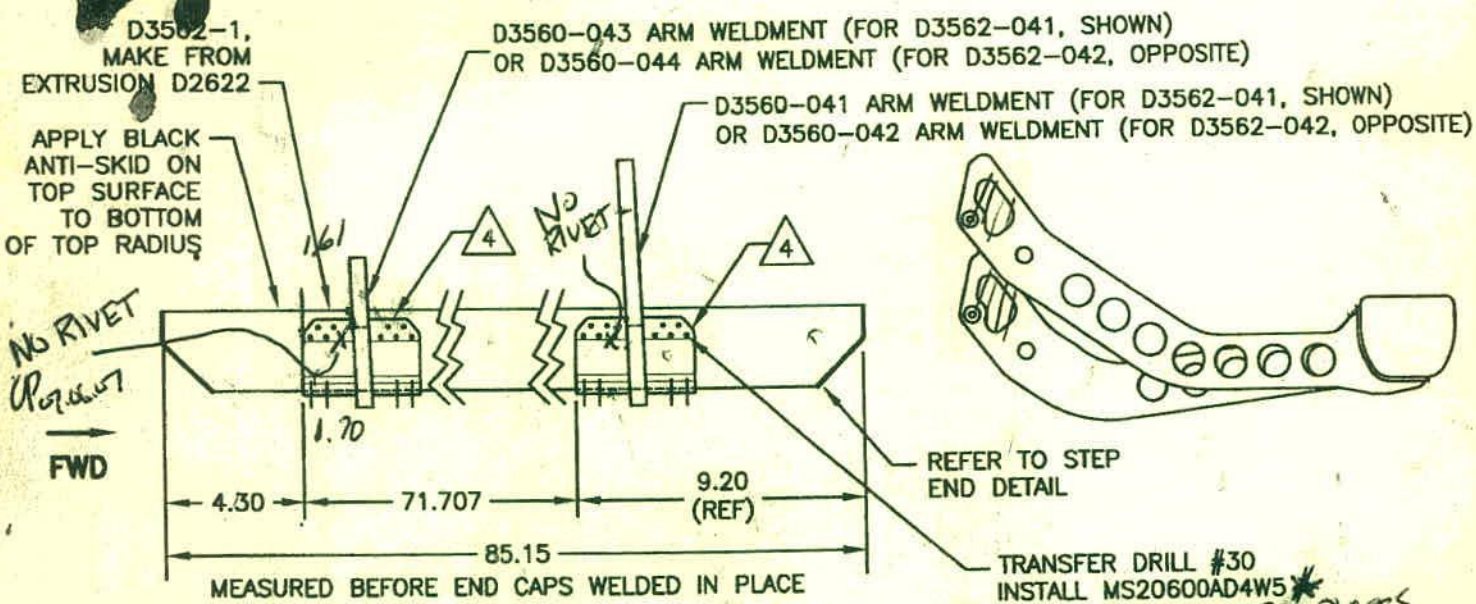
NOTE: ALL WELDS SHALL BE 100% VISUALLY INSPECTED BY A QUALIFIED INSPECTOR PER DART QSI 004

TYPICAL STEP END DETAIL
NOT TO SCALE

D3562-1, MAKE FROM EXTRUSION D2622

APPLY BLACK ANTI-SKID ON TOP SURFACE TO BOTTOM OF TOP RADIUS

D3560-043 ARM WELDMENT (FOR D3562-041, SHOWN) OR D3560-044 ARM WELDMENT (FOR D3562-042, OPPOSITE)

D3560-041 ARM WELDMENT (FOR D3562-041, SHOWN) OR D3560-042 ARM WELDMENT (FOR D3562-042, OPPOSITE)

1.61

NO RIVET

NO RIVET

4

4

1.70

FWD

4.30

71.707

9.20 (REF)

85.15

MEASURED BEFORE END CAPS WELDED IN PLACE

REFER TO STEP END DETAIL

TRANSFER DRILL #30
INSTALL MS20600AD4W5
RIVET (36 PLACES). 34 PLACES
DEBURR & TOUCH UP HOLES
WITH CHEMICAL CONVERSION
COAT BEFORE RIVETING,
TOUCH-UP RIVET HEADS
WITH PAINT PER
DART QSI 005 4.2

D3562-041 LH STEP ASSEMBLY (SHOWN)
D3562-042 RH STEP ASSEMBLY (OPPOSITE)

1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
2) WELD PER DART QSI 004
3) FINISH:
   AFTER WELDING END PLATES AND PRIOR TO DRILLING/INSTALLING ARM WELDMENTS:
   i) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
   ii) POWDER COAT GLOSS WHITE (4.3.5.1) OR GREY SANDTEX (4.3.5.6)
   OR BLACK SANDTEX (4.3.5.7) OR GREEN SANDTEX (4.3.5.8) PER DART QSI 005 4.3
   iii) BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
4) INSTALL ARM WELDMENTS WITH A LAYER OF SIKAFLEX-241/-201 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN THE ARM WELDMENT AND STEP EXTRUSION
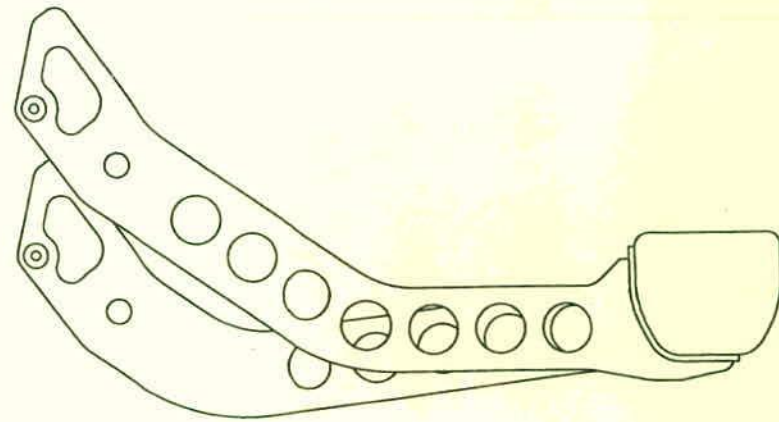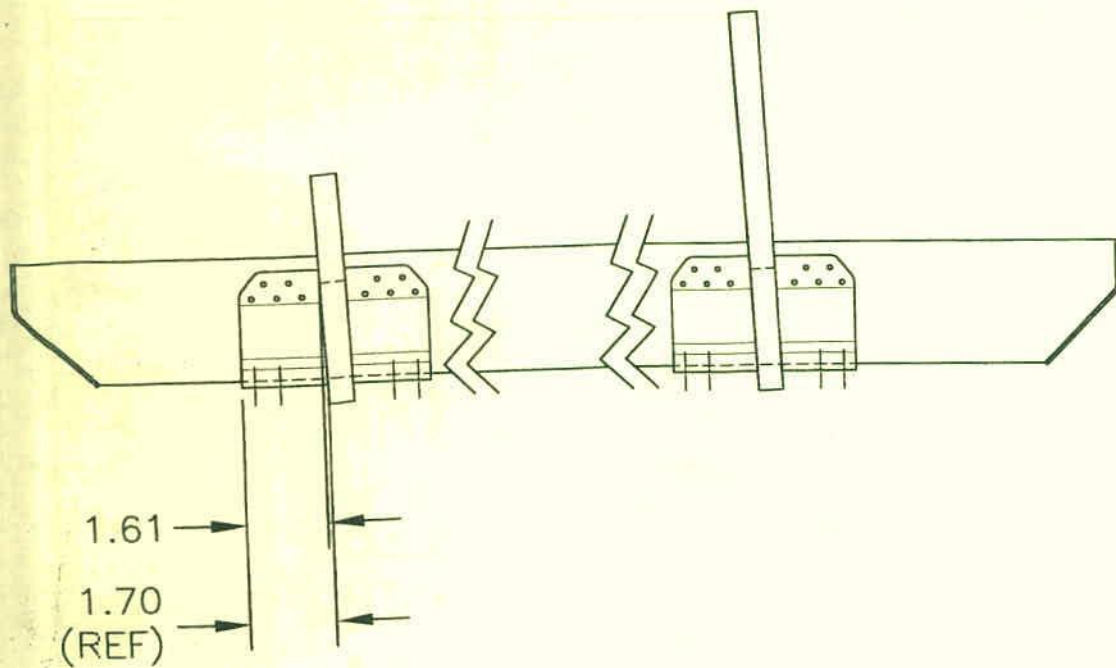5) ALL DIMENSIONS ARE IN INCHES

MAGNABOND   REF DS
07.06.07   EMAIL

		DATE		TITLE	DART AEROSPACE LTD
	DESIGN		DRAWN BY		HAWKESBURY, ONTARIO, CANADA
	CHECKED		APPROVED	STEP ASSEMBLY	
A	07.01.15	06.09.26	NEW ISSUE	DRAWING NO. D3562	REV. B
B	07.01.15		ARMS NOW RIVETED TO STEP	SHEET 1 OF 1	SCALE NTS

1.61

1.70
(REF)

Chris Provencal

From: David Shepherd [dshepherd@dartaero.com]

Sent: June 5, 2007 5:18 PM

To: 'Chris Provencal'

Subject: RE: D3562-041/-042

As we have discussed previously, this is acceptable as long as the Magnabond doesn't break down.

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Tuesday, June 05, 2007 11:00 AM
To: David Shepherd (David Shepherd)
Subject: D3562-041/-042

David.

For the D3562-041/-042 step weldment, as discussed. They want to switch from Sikaflex to Magnabond, and powder coat after final assembly.

As part of this change, the D3560-XX arms won't be powder coated, and the D2808 Bushing won't be assembled until after final assembly of the step weldment.

Since this is the first time trying this, we will ensure that the steps are checked after powdercoating in case the Magnabond doesn anything unexpected (eg. bubbling). If we see anything suspect, we will assemble them the old way.

Is this acceptable.

-Chris

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.472 / Virus Database: 269.8.9/834 - Release Date: 6/5/2007 2:38 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.5.472 / Virus Database: 269.8.9/834 - Release Date: 6/5/2007 2:38 PM

06/06/2007

Chris Provencal

From: David Shepherd [dshepherd@dartaero.com]
Sent: June 5, 2007 12:26 PM
To: 'Chris Provencal'
Subject: RE: D3560-041/-042/-043/-044

Go ahead.

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Tuesday, June 05, 2007 9:55 AM
To: David Shepherd (David Shepherd)
Subject: D3560-041/-042/-043/-044

David.

This is sort of a rush: dwg D3560 Rev.B (step weldment for -033/-034 steps) is not calling up the D2808 Bushing. It is missing the "Press fit D2808 Bushing after powder coat".

We will correct this, but for the time being: is it acceptable to press fit a D2808 Bushing into the D3560-041/-042/-043/-044 as the design originally intended?

-Chris

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Version: 7.5.472 / Virus Database: 269.8.9/834 - Release Date: 6/5/2007 2:38 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.5.472 / Virus Database: 269.8.9/834 - Release Date: 6/5/2007 2:38 PM

06/06/2007

Chris Provencal

From: David Shepherd [dshepherd@dartaero.com]
Sent: June 7, 2007 3:37 PM
To: 'Chris Provencal'
Subject: RE: D3562-041/-042

As we discussed, I think this change is acceptable without further qualification.

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Thursday, June 07, 2007 1:15 PM
To: David Shepherd (David Shepherd)
Subject: D3562-041/-042

David,

For the D3562-041/-042 Step Assembly, we need to remove qty(1) rivet from each D3560-XX Arm weldments attachments for manufacturability. There will be a total qty(34) MS20600AD4 rivets instead of qty(36) per step. The rivet will be removed from the side surface of the step. Remaining shear would be 350 lbs x 16 rivets = 5600 lbs per arm attachments.

-Chris

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.472 / Virus Database: 269.8.11/838 - Release Date: 6/7/2007 2:21 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.5.472 / Virus Database: 269.8.11/838 - Release Date: 6/7/2007 2:21 PM

07/06/2007

Chris Provencal

From:	David Shepherd [dshepherd@dartaero.com]
Sent:	June 11, 2007 2:33 PM
To:	'Chris Provencal'
Subject:	FW: Request for W/O change D3562-041/-042
Attachments:	wo_change_D3562.jpg

Acceptable deviation.

David

From: Chris Provencal [mailto:cprovencal@dartaero.com]
Sent: Monday, June 11, 2007 11:27 AM
To: David Shepherd (David Shepherd)
Subject: Request for W/O change D3562-041/-042

David,

For the D3562-041/-042 step weldment, when doing the actual assembly, it was discovered that the rivets on either side of the arm cannot be installed because of problems fitting the rivet tool. Total number of rivets will not be 32 per step assembly (was 36).

A picture is attaching which shows which 4 rivets are to be removed. Is this acceptable.

-Chris

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.472 / Virus Database: 269.8.13/843 - Release Date: 6/10/2007 1:39 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.5.472 / Virus Database: 269.8.13/843 - Release Date: 6/10/2007 1:39 PM